Models 16KX Small Volume High Pressure Regulator (Loader)
INSTALLATION AND OPERATION

Contents

General

Model 16KX Regulators are designed for 6000 psi maximum inlet pressure, with a variety of outlet ranges. Regulators in each range are available in various end connection types and sizes. These minor design variations are identified by code letters following the figure number.

Check pressure range and port connection fittings against service requirements. Do not use in systems where pressure may exceed ratings given on the nameplate.

Operation

The Model 16KX is a reducing regulator, designed to maintain a constant reduced or delivered pressure in a line or closed vessel where variations may occur in inlet pressure or in flow volume requirements.

There are two main cavities in the 16KX regulator, separated by controlling diaphragm. The lower cavity, in the body, contains the line fluid at the outlet pressure. The upper cavity houses the operating parts.

When the handwheel is turned clockwise, the operating spring is compressed and drives the diaphragm, assembly down to open the inlet valve. Line pressure is admitted through the inlet valve of the regulator into the body cavity, and out through the outlet port. The flow through the regulator builds up the pressure in the outlet system. This outlet pressure acts upward on the diaphragm in opposition to the operating spring. As this upward force builds up, the diaphragm assembly moved upward and allows the inlet valve to close, thus reducing or shutting off the flow and holding the outlet pressure constant.

Changing the compression of the operating spring by turning the handwheel will cause a corresponding change in outlet pressure, allowing outlet pressure to be set at any point within the design range of the regulator.

Installation

1. The 16KX Regulator may be installed in any position. It should be located at the most convenient point for adjustment and service. It is designed for panel mounting, with mounting bracket adjustable over a wide range to suit the installation.
2. To mount the regulator, remove handwheel screw and handwheel. Remove mounting screws from bracket, lift mounting plate off. Using bracket screws, adjust the position of mounting plate and screws on front of panel. Position regulator in panel, replace mounting plate and screws on front of panel. Replace handwheel and handwheel screw.
3. Before connecting regulator, be sure supply line is free from dirt or any foreign matter which might damage regulator valve parts.
4. Turn handwheel counter-clockwise to limit, and admit upstream pressure to inlet port.

Adjustment

1. Turn handwheel clockwise to increase, counter-clockwise to decrease the outlet pressure. Set handwheel for desired reduced pressure.

Service Suggestions

Minor difficulties can be corrected with the regulator in the line. If regulator does not respond to the following checks, it must be removed from the line and disassembled for cleaning and inspection.

Be sure to use only RedQ replacement parts. The Model 16KX Regulator is manufactured to extremely close tolerances which must be maintained if the regulator is to function properly.

Instructions for complete overhaul are given in W-16KX-BOO-2, MAINTENANCE INSTRUCTIONS

1. Failure to deliver pressure when handwheel is turned indicated inlet trouble.
    a. First check supply pressure.
    b. If supply is satisfactory, filter unit may have become clogged. Filter is mounted inside inlet port fitting and may be replaced without removing regulator from its mounting. Proceed as follows:
        i. Release inlet pressure from regulator.
        ii. Unscrew inlet port fitting from body unit, holding body against torque to avoid dam age to mounting.
        iii. Remove filter unit and inspect. If feasible, it may be cleaned and re-used. If not, discard and replace with new filter unit.
        iv. Replace inlet port fitting and tighten. On aluminum port fittings use 75 ft-lb torque; on corrosion-resistant steel port fittings, use 140 ft-lb torque, to ensure a tight meta;-to-metal seal. Use a second wrench on the outlet fitting to hold unit against torque and avoid damage to panel.
2. Heavy flow of line fluid through spring barrel indicated diaphragm failure.
    a. Remove regulator from line, for disassembly and replacement of damaged parts, Refer to W-16KX-BOO-2, MAINTANENCE INSTRUCTIONS.

Appendix

Assembly Drawing . . . . . W-16KW, AO1, or as applicable

Parts List. . . . . W-16KX-AO1-1, or as applicable

RedQ
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